

## Title (en)

Europium doped halogen-silicate phosphor and light emitting device

## Title (de)

Europium dotierter Halogen-Silicat-Leuchtstoff und Licht emittierende Vorrichtung

## Title (fr)

Phosphore d'halogène-silicate dopés à l'euporium et dispositif électroluminescent

## Publication

**EP 2280054 A3 20111214 (EN)**

## Application

**EP 10170103 A 20100720**

## Priority

JP 2009178726 A 20090731

## Abstract (en)

[origin: EP2280054A2] A phosphor includes a composition represented by the formula:  $(M_2 x, M_3 y, M_4 z) m M_1 O_3 X (2/n)$ , wherein M 1 is Si and may include at least one element selected Ge, Ti, Zr, and Sn; M 2 is Ca and may include at least one element selected Mg, Ba, and Zn; M 3 is Sr and may include at least one element selected from the group consisting of Mg, Ba, and Zn; X is at least one kind of halogen element; M 4 is Eu 2+ and may include at least one element rare-earth elements and Mn, wherein m is in a range of  $6/6 \leq m \leq 8/6$ ; n is in a range of  $5 \leq n \leq 7$ ; and x, y, and z satisfies  $x + y + z = 1$ , where  $0 < x < 1$ ,  $0 < y < 1$ , and  $0.01 \leq z \leq 0.3$ .

## IPC 8 full level

**C09K 11/61** (2006.01)

## CPC (source: EP US)

**C09K 11/77342** (2021.01 - EP US); **C09K 11/7739** (2013.01 - EP US); **H01L 33/504** (2013.01 - EP US); **H01L 2224/45144** (2013.01 - EP US); **H01L 2224/48091** (2013.01 - EP US); **H01L 2224/73265** (2013.01 - EP US)

## Citation (search report)

- [X] US 2008253951 A1 20081016 - DAICHO HISAYOSHI [JP], et al
- [A] US 2007145879 A1 20070628 - ABRAMOV VLADIMIR S [RU], et al
- [A] WO 2007135926 A1 20071129 - MATSUSHITA ELECTRIC IND CO LTD [JP], et al
- [A] EP 2075313 A1 20090701 - SUMITOMO CHEMICAL CO [JP], et al

## Cited by

EP2518128A4; CN109072072A; CN103718313A; EP2741339A4; EP2677017A4; US9337399B2; US8883041B2; WO2012111312A1; WO2017172110A1; JP5735014B2

## Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

## Designated extension state (EPC)

BA ME RS

## DOCDB simple family (publication)

**EP 2280054 A2 20110202**; **EP 2280054 A3 20111214**; **EP 2280054 B1 20140219**; CN 101987958 A 20110323; CN 101987958 B 20140618; JP 2011032340 A 20110217; JP 5530128 B2 20140625; US 2011025193 A1 20110203; US 8262935 B2 20120911

## DOCDB simple family (application)

**EP 10170103 A 20100720**; CN 201010245402 A 20100730; JP 2009178726 A 20090731; US 83877910 A 20100719